

## **Project Code and Title**

### **B.01.05 Improved Glazing for Reducing Ejection**

#### **Project Objective**

To develop a recommendation on whether the agency should regulate occupant retention through side-window glazing, and if so, details on how to regulate the industry. Work with the glazing industry to assess and encourage research on the alternative glazing system

#### **Background**

FMVSS 205 regulates the performance standards for automotive safety glazing. This research program was initiated three years ago to investigate the potential for mitigating occupant ejections through side windows and to evaluate potential upgrades to FMVSS 205.

#### **Problem Definition**

Twenty-seven percent of the 1993 FARS fatalities involved occupants that were completely or partially ejected from their vehicles. There were 7492 fatalities and 7,982 severe injuries per year that can be attributed to complete or partial ejections out of glazing. The 1988 through 1993 NASS files indicate that there is an average of 37,122 complete ejections and 23,878 partial ejections, annually. Of these, 51 percent of the complete ejections and 92 percent of all partial ejections were through the windows

#### **Research Approach**

The improved glazing research program will focus on developing a certification test to reduce ejection through side glazing. This will require a better understanding of the costs, benefits, and the occupant body motions and forces during ejection. Alternative glazings will be tested in experimental crash situations to assess the performance of alternative glazings in ejection reduction and occupant safety. This data will be used in the certification test development. Additionally, the capacity for hazing and scratching along with the public acceptance for it will be evaluated.

#### **Potential Impact/Application**

An estimated 1,300 people could be saved and 1,297 serious injuries prevented with advanced glazing.

## Key Milestones

- ▶ Status Report developed, November 1995
- ▶ Public Meeting, February 1996
- ▶ Second Status Report Due January 1997
- ▶ Project Completion on or before May 1998

RESOURCE REQUIREMENTS	FY96	FY97	FY98	FY	FY
Contract Money (\$K)	100	200	200		

## Project Manager(s)

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## Completion Date

Recommendation to Agency Due on or before May 1998

## Publications

- 1 Advanced Glazing Research Team, "Ejection Mitigation Using Advanced Glazing, A Status Report, November 1995", NHTSA Docket 95-41 GR-002, November 1995
- 2 John Winnicki, "Estimating the Injury Reducing Benefits of Ejection Mitigating Glazing", DOT-HS-808-369, February 1996

**Keywords:** Ejection, Glazing, Windows, Glass

**Project Tasks**

<b><u>Task</u></b>	<b><u>Title and Description</u></b>
Task 1	Accident Data Analysis
Task 2	Feasibility Testing
Task 3	Test Procedure Development
Task 4	Countermeasure Development
Task 5	Analytical Support
Task 6	Cost Study
Task 7	Benefit Estimates

<b>Task</b>	<b>Start Date</b>	<b>Projected Completion Date</b>	<b>Status/Responsibility</b>
1	5/92	6/94	Completed, will be updated prior to project completion
2	5/92	12/93	Complete
3	5/93	5/98	In Progress
4	4/95	5/98	In Progress
5	1/94	5/98	Initial goals completed, but continually updated, as time permits
6	7/94	7/95	Complete, may be updated prior to project completion
7	3/94	9/95	Complete, will be updated prior to project completion